

Claims

1. Process for the manufacture of tetraalkylammonium tetrafluoroborate-containing electrolyte compositions, characterized in that said process comprises step (i):
 - (i) mixing of at least one tetraalkylammonium halide with at least one metal tetrafluoroborate in at least one organic solvent, which is partially or completely miscible with water.
2. The process as claimed in claim 1, characterized in that the at least one organic solvent is selected from the group comprising nitriles, dinitriles, alkyl carbonates, alkylene carbonates, lactones.
3. The process as claimed in claim 1 or 2, characterized in that the alkyl groups of the at least one tetraalkylammonium halide contain independently from each other of from 1 to 10 carbon atoms.
4. The process as claimed in any of claims 1 to 3, characterized in that the at least one metal tetrafluoroborate is an alkali metal tetrafluoroborate.
5. The process as claimed in any of claims 1 to 4, characterized in that the at least one tetraalkylammonium halide and the at least one metal tetrafluoroborate are mixed in a molar ratio of from 2 : 1 to 1 : 5.
6. The process as claimed in claim 5, characterized in that the mixing process is carried out at a temperature of from - 50 °C to + 240 °C.
7. The process as claimed in any of claims 1 to 6, characterized in that the at least one organic solvent is acetonitrile, 1,2-propylene carbonate or γ -butyrolactone and 1 to 4

of the alkyl groups of the at least one tetraalkylammonium tetrafluoroborate are ethyl groups.

8. The process as claimed in any of claims 1 to 7, characterized in that said process
5 comprises at least one of the reaction steps (ii) and (iii):

(ii) separation of metal halide,

(iii) drying.

- 10 9. Tetraalkylammonium tetrafluoroborate-containing electrolyte compositions,
characterized in that said compositions are obtainable by a process as defined in any
of the claims 1 to 8.

- 15 ~~10.~~ ~~Tetraalkylammonium tetrafluoroborate-containing electrolyte compositions as~~
claimed in claim 9, characterized in that said compositions contain an amount of
metal halogenide of from 10 ppm to 2 % by weight, wherein said amount relates to a
solvent-free electrolyte residue.

- 20 11. Tetraalkylammonium tetrafluoroborate-containing electrolyte compositions as
claimed in claim 10, characterized in that said compositions are noncorrosive in
electrochemical cells or capacitors.

- 25 12. The use of tetraalkylammonium tetrafluoroborate-containing electrolyte
compositions produced according to any of the claims 1 to 8 or use of
tetraalkylammonium tetrafluoroborate-containing electrolyte compositions according
to any of claims 9 to 11 in electrochemical cells or capacitors.